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Invited Commentary

Comments regarding 'The War Against Error: A 15 Year Experience of Completion Angioscopy Following Carotid Endarterectomy'

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Professor Naylor and his team should be congratulated on both the thoroughness of this audit and the excellent results that they have achieved. The principle ethos for all surgeons who perform carotid endarterectomy (CEA) should be an on-going commitment to increase the safety of surgery. For these authors quality control, both intra- and post-operatively has been the focus of improved outcomes during an extensive experience. So why haven't we all adopted the methods that Professor Naylor proposes? Is it laziness, overconfidence, lack of resources or a belief that the problem is not as great as the authors lead us to believe?

Like most vascular surgeons I consider myself neurotic about the ability of CEA to end in devastating outcomes for both the patient and surgeon so this rules out the first two reasons for not adopting angioscopy. I also believe that neurosis, together with the use of intra-operative magnification eliminates the need to further examine the distal limit of the endarterectomy, a view that is essentially supported by the findings of Professor Naylor's report.

What remains is the issue of residual thrombus at the endarterectomy site as a cause of intra-operative stroke. This will not be prevented by completion duplex ultrasonography performed once flow has been restored, a technique proposed by other authors who also report excellent outcomes for surgery.[1,2] Of course, nobody would dispute that large thrombi that embolise following clamp release will probably cause a stroke and that they should be removed. Given that nearly all CEAs are performed under loco-regional anaesthesia in our unit I can be confident that we are not leaving large thrombi in situ. Thus it seems logical to assume that a policy of more limited inspection prior to patch closure and a very careful protocol for flushing the endarterectomy site can achieve the same results. The principle steps in this protocol are:

1. Back-bleed the internal (ICA) and external (ECA) carotid arteries and then re-clamp.
2. Flush arteriotomy with heparinised saline and then blood at arterial pressure by releasing the proximal clamp temporarily (flushes both the distal common carotid artery and the endarterectomy site) and then re-clamp.
3. A further forceful flush with heparinised saline followed by aspiration of the endarterectomy site with an American pattern sucker.
4. Completion of patch closure during ICA back-bleeding followed by initial perfusion of the ECA.

Thus I believe that the same benefit arises from continuous paranoia and the use of suction rather than angioscopy.

Small thrombi that "blind" suction may miss are likely to be unstable following the administration of pre-operative clopidogrel and intra-operative heparin and thus even if embolisation occurs spontaneous lysis is likely.

In conclusion, Professor Naylor views are correct because he pays obsessional attention to detail and he has confidence in this technique. However I would suggest that a fine suction device might be a simple alternative to angioscopy. There is no place for laziness or overconfidence but I'm not going to buy an angioscope either!

References

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